Summary of Fishery Surveys
Salem Lake, Taylor County, 2016

WDNR's Fisheries Management Team from Park Falls completed a nighttime electrofishing survey in late spring 2016 to assess the abundance and size structure of largemouth bass and bluegill populations in Salem Lake. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society. "Keeper size" is our own description applied to bluegill ≥ 7 inches long and black crappie ≥ 9 inches long, based on known angler behavior.

Survey Effort

With water temperature at 72°F on June 1, 2016, our electrofishing survey was well-timed to represent the targeted populations as their spawning activities subsided. We sampled all fish species in a complete shoreline circuit (0.61 miles) in 0.37 hours. Salem Lake's steeply-sloping lakebed and deep near-shore zone combined with its very dark brown stained water and the narrow band of dense floating and emergent vegetation around the entire perimeter reduced our electrofishing capture efficiency. Nonetheless, we believe our sample adequately represents bass and bluegill population status.

Habitat and Public Access Characteristics

Located about 13 miles northwest of Medford, Wisconsin, Salem Lake is a 13-acre drainage lake at the headwaters of Sailor Creek, a tributary to the South Fork Yellow River. Though our survey was not designed to evaluate fish community composition, our results suggest that fish diversity has decreased in Salem Lake. We captured only largemouth bass and bluegills, compared to eight species recorded in a May 2, 1967 electrofishing survey and 10 species listed in the 1970 WDNR publication *Surface Water Resources of Taylor County*. In that published inventory, lakebed materials were roughly distributed as 50% muck, 40% gravel, and 10% sand. Maximum and average depths were 50 and 20 feet, respectively. Dissolved oxygen concentrations recorded at 5-foot depth intervals on September 9, 1966 decreased to 1.4 mg/l at 15 feet, suggesting that fish seldom occupy the bottom two-thirds of the water column. Most of the shoreline (≥ 90%) remains undeveloped due to wetland soils and vegetation. An unimproved boat landing is accessible from the Salem Lake Road right-of-way on the east shore. Be careful using this launch site—the landing is situated just past a curve in the gravel road. Parking for vehicles and trailers is limited to several roadside spaces.

Summary of Results

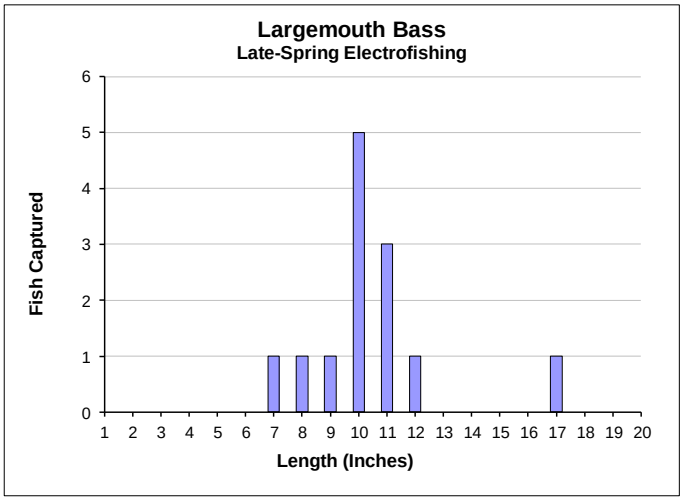
Our contemporary electrofishing survey showed no sign of the white suckers and three bullhead species that were present 50 years ago or the yellow perch population that was once described as "abundant and

slow-growing" in Salem Lake. If these important forage species are indeed absent (or, more likely, present at trace levels of abundance), then recruitment, survival, and growth will undoubtedly be impaired in sportfish populations that prefer to eat tube-shaped versus platter-shaped food.

Largemouth Bass

Late Spring Electrofishing

Captured 21 per mile or 35 per hour ≥ 8"	
Quality Size ≥ 12"	17%
Legal Size ≥ 14"	8%
Preferred Size ≥ 15"	8%

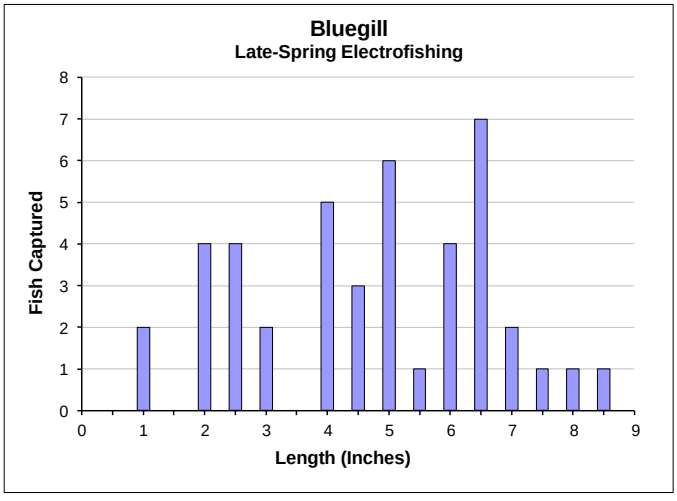


Our electrofishing capture rate represented a largemouth bass population in low to moderate abundance, yet only two of the 13 bass in our sample were of quality size (12 inches or longer). It is possible that anglers harvest a high proportion of legal-sized bass ≥ 14 inches from this small, remote lake. Alternatively, preferred prey in short supply may cause largemouth bass to grow slowly, even at moderate population abundance, and die of natural causes before many can attain the sizes anglers prefer to catch. We did not collect bony structures to analyze largemouth bass length at various ages.

Bluegill

Late Spring Electrofishing

Captured 54 per mile or 89 per hour ≥ 3"	
Quality Size ≥ 6"	48%
Keeper Size ≥ 7"	15%
Preferred Size ≥ 8"	6%



Our electrofishing sample included bluegills in a wide range of size and age classes, suggesting that the population has the moderate recruitment and adequate growth rates necessary to produce a satisfactory proportion of fish at least 8 inches long. Though we rarely find largemouth bass populations capable of controlling panfish abundance in our managed waters larger than 80 – 120 acres, the relatively few bass

Illustrations by Virgil Beck

seem to fulfill that role in this small lake. Presumed low angling pressure should help to maintain the bluegill population's favorable size structure.

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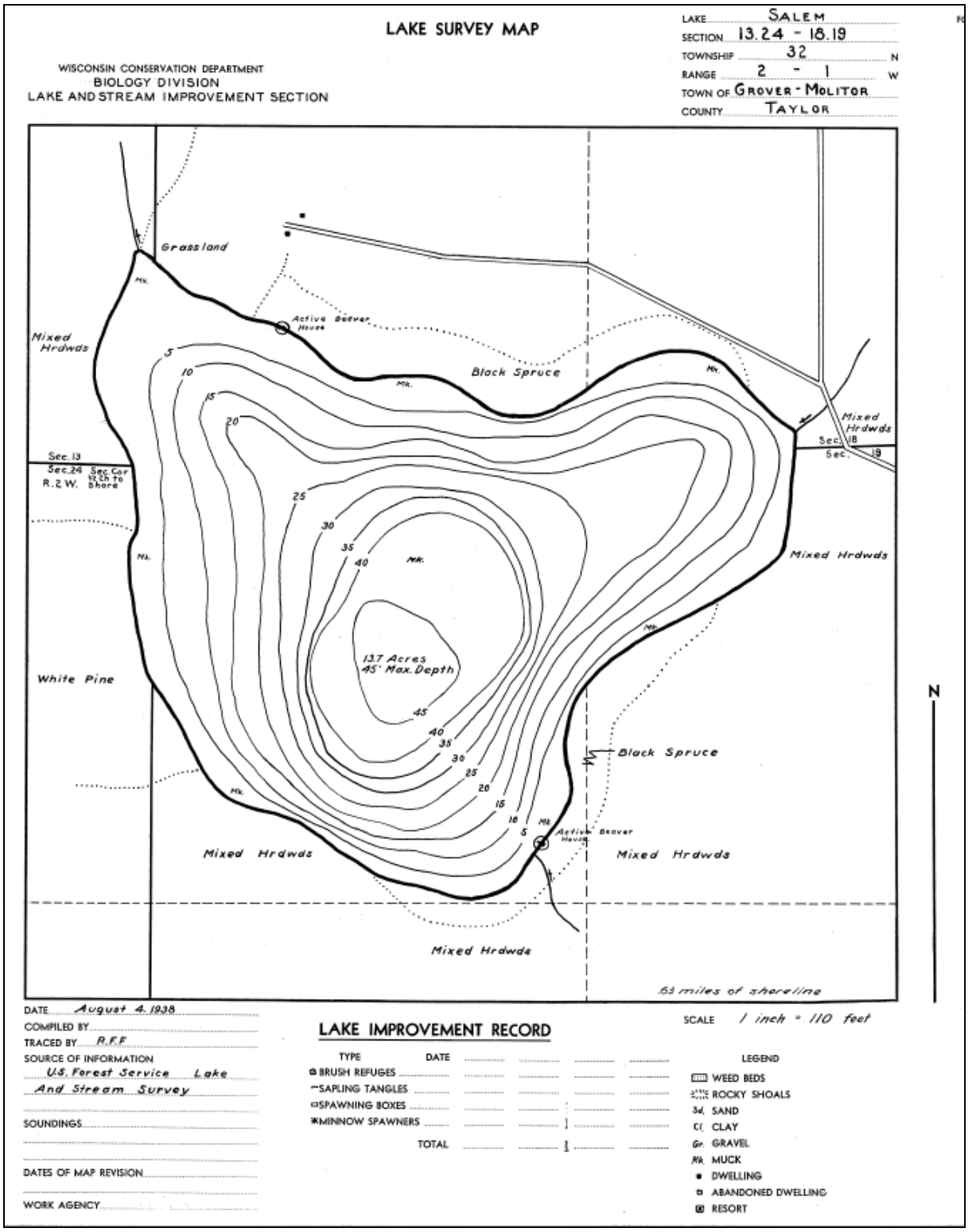
Written by: Jeff Scheirer—Fishery Biologist, December 7, 2016.

Reviewed by: Steve Gilbert—Woodruff Field Unit Supervisor, January 25, 2018.

Approved for web posting by: Mike Vogelsang—Northern Administrative District Supervisor, January 29, 2018.


LAKE SURVEY MAP
WISCONSIN CONSERVATION DEPARTMENT
BIOLOGY DIVISION
LAKE AND STREAM IMPROVEMENT SECTION
LAKE SALEM
SECTION 13,24 - 18,19
TOWNSHIP 32 N
RANGE 2 - 1 W
TOWN OF GROVER - MOLITOR
COUNTY TAYLOR
Grassland
Active Beaver House
Mixed Hrdwds
Black Spruce
Mixed Hrdwds
Sec. 18
Sec. 19
Sec. 13
Sec. 24 Sec. Cor
R. 2 W.
White Pine
13.7 Acres
45' Max. Depth
Black Spruce
Active Beaver House
Mixed Hrdwds
Mixed Hrdwds
Mixed Hrdwds
Mixed Hrdwds
5
10
15
20
25
30
35
40
45
Mk.
N
.53 miles of shoreline
DATE August 4, 1938
COMPILED BY
TRACED BY R.F.F
SOURCE OF INFORMATION
U.S. Forest Service Lake
And Stream Survey
SOUNDINGS
DATES OF MAP REVISION
WORK AGENCY
LAKE IMPROVEMENT RECORD
TYPE DATE
BRUSH REFUGES
SAPLING TANGLES
SPAWNING BOXES
MINNOW SPAWNERS
TOTAL
SCALE 1 inch = 110 feet
LEGEND
WEED BEDS
ROCKY SHOALS
Sd. SAND
Cl. CLAY
Gr. GRAVEL
Mk. MUCK
DWELLING
ABANDONED DWELLING
RESORT